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AMENDMENTS**In the claims:**

Please cancel claims 4, 6-10 without prejudice or disclaimer.

Please amend claims 1, 5, 17 and 18 as follows.

1. (Twice Amended) A semiconductor-on-insulator (SOI) structure comprising;
a semiconductor substrate;
a leaky, thermally conductive insulator material (LTCIM) layer disposed directly on the semiconductor substrate;
a semiconductor layer disposed directly on the LTCIM layer; and
active regions defined in the semiconductor layer by isolation trenches and the LTCIM layer,
wherein the LTCIM layer comprises at least one of doped amorphous silicon, undoped amorphous silicon and undoped porous silicon, and
wherein the LTCIM layer extends over an entire lateral dimension of the semiconductor substrate.
5. (Amended) The SOI structure according to claim 4, wherein the LTCIM layer preferably has a resistivity value 10 Ohms-cm or greater.
17. (Twice Amended) The SOI structure according to claim 18, further comprising;
a gate defining a channel interposed between a source and a drain formed within an active region of the SOI structure; and
the active region defined in the semiconductor layer by isolation trenches and the LTCIM layer.
18. (Amended) A semiconductor-on-insulator (SOI) structure comprising;
a semiconductor substrate;